Pesticide Residue Control Results national Summary Report Year: 2017 Country: Denmark

Jensen, Bodil Hamborg

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

PESTICIDE RESIDUE CONTROL RESULTS

NATIONAL SUMMARY REPORT

Year: 2017

Country: Denmark

National competent authority/organisation:

Danish Veterinary and Food Administration

National Food Institute, Technical University of Denmark

Web address where the national annual report is published:

http://www.food.dtu.dk/publikationer/kemikaliepaavirkninger/pesticider-i-kosten

https://www.foedevarestyrelsen.dk/Kontrol/Kontrolresultater/Sider/Pesticidrester.aspx

Table of contents

1. Country

1.1. Name of the national competent authority/organisation

Danish Veterinary and Food Administration

National Food Institute, Technical University of Denmark

Web address where the national annual report is published:

http://www.food.dtu.dk/publikationer/kemikaliepaavirkninger/pesticider-i-kosten

https://www.foedevarestyrelsen.dk/Kontrol/Kontrolresultater/Sider/Pesticidrester.aspx

2. Objective and design of the national control programme

2.1. Objective

The Danish Veterinary and Food Administration (DVFA) is the competent authority for the enforcement of the pesticide monitoring programme in Denmark.

The monitoring programme include both sample strategies listed as objective or selective sampling as well as samples listed as suspect sampling.

2.2. Design

The National Food Institute, Technical University of Denmark, designed the monitoring programme in cooperation with the Danish Veterinary and Food Administration. Since 2006 the sampling plan has been based on dietary consumption pattern with regard to pesticide intake from two previous reports [1,2], which analysed monitoring data from 1998-2003 and 2004-2011. These reports showed that 25 commodities were responsible for more than 95% of the intake of pesticide residues (Top25 commodities). These commodities were included in the sampling plan along with the commodities included in the EU coordinated control programme. The focus on the Top25 commodities provide a better basis for comparison between years, so that trends in pesticide residues found may be analysed. In addition to these samples, a broad range of commodities common on the Danish market was analysed, including processed foods, food for infants and organically grown products. Most sampling projects were designed to cover surveillance as well as control in combination and the sampling strategy for these samples is listed as objective or selective sampling. One project was set up to cover sampling and analysis according to Regulation (EC) No 669/2009. Another project was designed to cover suspect sampling and included sampling of direct import via Copenhagen Airport or other border entries. Sampling strategy for these projects is listed as suspect sampling.

Samples of animal origin were not analysed for all pesticides included in the coordinated programme due to lack of validated analytical methods for all relevant pesticides.

Sampling was performed by authorised personnel from the four Food Control Offices of the Danish Veterinary and Food Administration. Directive 2002/63/EC on sampling procedures for control of

[1] M.E. Poulsen, J.H. Andersen, A. Petersen, H. Hartkopp (2005). Pesticide Food Monitoring, 1998-2003Part2.ISBN87-91569-54-0.
http://www.fodevarestyrelsen.dk/Publikationer/Alle_publikationer/2005/002.htm

[2] Petersen A., Hamborg Jensen B., Andersen J.H, Poulsen M.E., Christensen T., Nielsen E. (2013). "Pesticides Residues, results from the period 2004-2011, ISBN 978-87-92763-78-5. WWW.food.dtu.dk

pesticide residues is implemented in the Danish legislation. All samples for control of the MRL, except the directly imported samples, were sampled on the market, primarily at wholesalers or importers. Meat was sampled at slaughterhouses.

Reporting includes samples analysed for pesticides from projects, based on Directive 96/23.

Most samples of fruit and vegetables were analysed for about 326 pesticides (counted as residue definitions). In addition, part of the samples (64 samples) were analysed for dithiocarbamates and others for bromide ion (13 samples) and chlormequat and mepiquat (179 samples). Due to the methodology applied, it was not possible to distinguish between the specific dithiocarbamates included in the residue definition for enforcement.

3. Key findings, interpretation of the results and comparability with the previous year results

3.1. Key findings

In 2017 a total of 1839 surveillance samples of fruit, vegetables, cereals, processed products, baby food and animal products were analysed. Furthermore 125 samples were taken from direct import from third countries at the Copenhagen Airport, 45 samples were taken according to Regulation 669/2009. Samples from these two projects are listed as suspect sampling. Results from these projects are reported separately and are not included in the following general statistics.

Of the 1839 samples, 609 were produced in Denmark and 1275 samples were produced in other EU countries and outside EU. The samples included 1479 samples of fruit, vegetables and cereals, 230 samples of animal origin, 119 samples of processed vegetable foods and 11 samples of baby foods.

127 (10 %) of the fruit and vegetable samples and 36 (16%) of the cereal samples were organically produced.

Pesticide residues were found in 71% of the conventionally grown fruit, 42% of the conventionally grown vegetables and in 35% of the conventionally grown cereal samples. Residues exceeding the MRL were found in 2.5 % of the conventionally grown fruit and vegetables samples (28 samples). Of these, 22 samples (1.5%) had non-compliant residues. Six cereal samples (3.2 %) had non-compliant residues. No samples of processed commodities and baby food exceeded the MRLs.

For fruits, pesticide residues were found in 76% and 73% of the samples produced in EU[3] and outside EU, respectively, whereas pesticide residues was only found in 48% of the samples from Denmark. For vegetables, residues were found in 55% and 43% of the samples produced in EU and outside EU, respectively, while residues were found in 27% of the samples from Denmark.

The frequency of conventionally grown samples exceeding the MRLs was 1.3 % and 4.6% for fruit produced in EU and outside the EU, respectively. For vegetables the frequency of samples exceeding the MRL was 2 % and 5.3% for vegetables originating from EU and outside the EU, respectively. The frequency of residues exceeding the MRL in Danish grown fruit was zero while the frequency of Danish grown vegetables exceeding the MRLs was 2.0 %.

A total of 170 samples (from conventionally as well as organically grown crops) were taken using sampling strategy "Suspect". Non-compliant residues were found in 18 (14%) samples.

Residues were found in three organically produced samples: spinosad was found in two samples of lettuce from the Italy and one sample of thyme from Italy.

All three samples were found to be produced in accordance with the rules for organic production.

[3] "EU": "EU countries excluding Denmark"

3.2. Interpretation of the results

Generally, the results from the monitoring programme in 2017 is comparable with the results from previous years.

- For conventionally grown fruit, pesticides residues were found in 71 % of the samples.
- For conventionally grown vegetables pesticides residues were found in 42 % of the samples.
- For conventionally grown fruit and vegetables exceedances of the MRL were found in 2.4 % and 2.6 % of the samples, respectively.
- Generally more exceedances of the MRL is seen in fruit and vegetables produced in other EU countries and third countries compared to fruit and vegetables produced in Denmark.
- In cereals, pesticide residues were found in 3.7 % of the conventionally grown samples.
- In processed commodities exceedances were found in 0.9 % of the samples.
- No residues were found in baby food.
- In animal commodities, residues of thiacloprid were found in three samples of honey.
- In organically grown samples, pesticide residues were found in 3.3 % of the samples. All samples were concluded to be produced in accordance with the rules for ecological production.
- More than one residue were found in more samples. These samples were primarily found in samples outside the EU.
- All exceedances of the MRL except four were found not to result in any health risk. All other samples with multiple residues were found not to result in any health risk.

3.3. Comparability with the previous year results

In 2017 a total of 2009 samples were analysed for pesticide residues compared to a total of 2515 samples analysed in 2016.

In 2017, residues were found to exceed the EU MRL in 2.5 % of the conventionally grown samples of non-animal origin (36 samples) taken by objective or selective sample strategy compared to 2.3 % in 2016. Of these 1.5 % (22 samples) was found to be non-compliant with the EU MRL compared to 1.3 % in 2016.

For samples taken as suspect sampling strategy in 2017, residues were found to exceed the MRL in 11 % of the samples compared to 15.6 % in 2016. Of these, 9.4 % were found non-compliant with the EU MRL compared to 11.6 % in 2016.

4. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

4.1. Possible reasons for non-compliant samples

In 2017, residues were found to exceed the EU MRL in 2.5 % of the conventionally grown samples of non-animal origin (36 samples) taken by objective or selective sample strategy. Of these 1.5 % (22 samples) was found to be non-compliant with the EU MRL.

For samples taken by suspect sampling strategy, residues in 11 % (19 samples) were found to exceed the EU MRL. Of these, 9.4 % (16 samples) were found non-compliant with the EU MRL.

Follow-up actions were taken for samples that were found non-compliant with the EU MRL (measurement uncertainty taken into consideration) or non-compliant with the conditions for organic farming, see Table 1.

In general there is no verified knowledge of the reasons for non-compliant results. For residues in organic products, the reasons for evaluation have been stated above.

4.2. ARfD exceedances

Three samples were found to exceed the ARfD. The three samples were samples taken as suspect sampling. One sample of Longkong from Thailand with a content of chlorpyrifos of 0.83 mg/kg, one sample of yardlong bean from Sri Lanka with a content of carbofuran of 0.162 mg/kg and one sample of pitaya from Thailand with a content of carbendazim (1.16 mg/kg), propiconazole (0.075 mg/kg), tricyclazole (0,068 mg/kg). All three samples were due to health risk withdrawn from the market and notified to RASFF. Another sample of rice from Bulgaria was taken as objective sampling with a content of carbendazim and benomyl (0.11 mg/kg), hexaconazol (0,021 mg/kg), tricyclazole (0.081 mg/kg). Because of the content of tricyclazole, for which no ARfD or ADI can be set by EFSA because of the lack of toxicological data the rice was withdrawn from the market.

4.3. Actions taken

Table 1 gives an overview of what sort of actions that have been taken when a non-compliance product was proven.

Table 1: Actions take

Action taken	Number of non-compliant samples concerned	Comments
Administrative consequences	1	
Lot recalled from the market	10	
Rapid Alert Notification	3	Suspect sampling
Warnings to responsible food business operator	11	
Other actions	11	
No action	2	

5. Quality assurance

Table 2: Laboratories participation in the control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
DK	National Food Institute, Technical University of Denmark	DTU Food	20 April 1995 (DANAK #350)	DANAK, Denmark	EUPT-FV16, EUPT-SM06, EUPT-AO09, EUPT-SRM9, FAPAS 0991. Organiser of EUPT-CF8
DK	Danish Veterinary and Food Administration	FVST	30. September 2008 (DANAK #405)	DANAK, Denmark	EUPT-CF11, EUPT-FV19, EUPT-AO12, EUPT-SRM12,FAPAS 19240, FAPAS 19241, FAPAS 19242, FAPAS 19229, FAPAS 19236, FAPAS 19237, FAPAS 09113 FAPAS 09112, FAPAS 05108, Rikilt Fipronil, JRC-GEE fipronil egg

6. Processing Factors (PF)

In the table below the processing factors are compiled that were reported by national competent authorities to verify compliance of processed products with EU MRLs. In addition to these, factors based on water content from food composition tables in fresh vs. dried commodities were used for dried samples where MRL was set on the fresh commodity.

Table 3: Processing factors

Pesticide (report name)[a]	Unprocessed product (RAC)	Processed product	Processing factor [b]	Comments
Acetamiprid	Grape for wine production Rice	Wine Polished rice	1.3 0.5	
Boscalid	Grape for wine production	Wine	1.3	
Buprofezin	Rice	Polished rice	0.5	
Chlorantraniliprol	Grape for wine production	Wine	1.3	
Chlorpyrifos	Rice	Polished rice	0.5	
Dimethomorph	Grape for wine production	wine	1.3	
Fenhexamid	Grape for wine production	wine	1.3	
Hexaconazol	Rice	Polished rice	0.5	
Iprovalicarb	Grape for wine production	wine	1.3	
Isoprothiolan	Rice	Polished rice	0.5	
Imidacloprid	Grape for wine production Rice	Wine Polished rice	1.3 0.5	
Propiconazol	Rice	Polished rice	0.5	
Metalaxyl	Grape for wine production	wine	1.3	
Tebucanazol	Rice	Polished rice	0.5	
Thiamethoxam	Rice	Polished rice	0.5	
Tricyclazol	Rice	Polished rice	0.5	

7. Additional Information

The analytical methods have been developed and/or validated by the National Food Institute, Technical University of Denmark. Most samples were analysed at the laboratory of the Danish Veterinary and Food Administration in Ringsted. Both laboratories are accredited to pesticide analysis in compliance with EN45001/ISO17025 by the Danish Accreditation body, DANAK. Furthermore, the laboratories participated in the relevant FAPAS proficiency test scheme and in all EU-proficiency tests.

"Guidelines concerning Quality Control Procedures for Pesticide Residue Analysis" has been applied for all methods. Mass selective confirmation was performed for part of the GC multi methods and for the LC/MS-MS methods for fruit and vegetables. Analytical uncertainty is not applied in monitoring reports, but is always applied in case of enforcement actions.

Each year, the National Food Institute, Technical University of Denmark, and the Danish Veterinary and Food Administration prepare a report on pesticide residues in foods on the Danish market. Since 1

January 2011, the annual pesticide report has been supplemented with the regular publication of control data from each quarter. The quarterly reporting comprises results from samples of fresh and frozen fruit and vegetables as well as cereals – both conventionally and organically grown. The National Food Institute, Technical University of Denmark, prepares and publishes the quarterly reports on the web site of the institute.

A risk assessment by the National Food Institute was performed for all findings above the MRL. It was concluded in all cases that there was no risk for the consumers except for four samples (see above). In addition, all samples, where more than one pesticide residue were found, were evaluated using the Hazard Index method, using the sum of each residue in relation to the ADI and ARfD, respectively, taking into account the estimated consumption of the sample commodity for an adult and a child. For all samples taken in 2017 with multiple residues it was concluded that the residues were not expected to result in any risk for the consumer.

8. Note on confidentiality of certain control data submitted by reporting country

No comments.